

{In Archive} Re: Fw: Office Rating Model Changes - Additional Questions 

Alyssa Quarforth to: Alexandra Sullivan

03/29/2007 08:46 AM

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Rating Model Changes - Additional Questions
	Alexandra Sullivan	<i>Aly/Cindy, Could you please look over my responses and let me know</i>
	Cindy Jacobs	<i>Re score changes, I would also like to see: - building name</i>
	Alexandra Sullivan	<i>Cindy, I do not think there is an easy way for SRA to expl</i>
	Alyssa Quarforth	<i>Alexandra, I think your answers look complete given we still need</i>

Alexandra,

I think your answers look complete given we still need to make decisions on a variety of items.

Aly

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6406J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov
Alexandra Sullivan/DC/USEPA/US

**Alexandra
Sullivan/DC/USEPA/US**
03/28/2007 02:54 PM

To: Alyssa Quarforth/DC/USEPA/US@EPA, Cindy
Jacobs/DC/USEPA/US@EPA
cc: Michael Zatz/DC/USEPA/US@EPA
Subject: Re: Fw: Office Rating Model Changes - Additional Questions 

Aly/Cindy,

Could you please look over my responses and let me know if you have anything to add?

Cindy, I am particularly interested in your perspective for the question about what information we will want to see in order to assess the score changes. I understand that this may be hard to predicted ahead of time, but we'll have to do our best.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J

Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



Phase1 SRA Question 2_Response.doc Template.Changes.xls

Denessa Moses/DC/USEPA/US



**Denessa
Moses/DC/USEPA/US**
03/28/2007 12:58 PM

To Alexandra Sullivan/DC/USEPA/US, Alyssa
Quarforth/DC/USEPA/US

cc

Subject Fw: Office Rating Model Changes - Additional Questions

More questions from SRA...

----- Forwarded by Denessa Moses/DC/USEPA/US on 03/28/2007 12:57 PM -----



"Mikulka, Kristine"
<Kristine_Mikulka@sra.com>

To Denessa Moses/DC/USEPA/US@EPA

cc

03/28/2007 12:54 PM

Subject Office Rating Model Changes - Additional Questions

Hi Denessa –

I have attached a document that has our new questions and the known outstanding items. I am hoping it will help us track everything. If there are any of the new questions that can be answered that would help us to keep moving forward. Please let me know if you have any questions.

Thanks, Kris

Kristine Mikulka

Project Manager
kristine_mikulka@sra.com
703-284-6913



Space Model_OfficeQuestions-Issues.doc



Accepted: Meeting To Finalize Office Model & Financial Center Decisions

Tue 04/03/2007 10:00 AM - 11:00 AM

No Location Information

Michael Zatz has accepted this meeting invitation

Required:

Alyssa Quarforth/DC/USEPA/US@EPA, Michael Zatz/DC/USEPA/US@EPA, Stuart Brodsky/DC/USEPA/US@EPA,

{In Archive} Re: Fw: Office Rating Model Changes - Additional Questions 

Alexandra Sullivan to: Denessa Moses

04/02/2007 05:22 PM

Cc: Alyssa Quarforth

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Rating Model Changes - Additional Questions
	Alexandra Sullivan	<i>Aly/Cindy, Could you please look over my responses and let me know</i>
	Cindy Jacobs	<i>Re score changes, I would also like to see: - building name</i>
	Alexandra Sullivan	<i>Cindy, I do not think there is an easy way for SRA to expl</i>
	Alyssa Quarforth	<i>Alexandra, I think your answers look complete given we still need</i>

Denessa,

We've answered the questions, in Blue. The excel template goes with answer 1.1.1.2

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



Phase1 SRA Question 2_Response.doc Template.Changes.xls

Denessa Moses/DC/USEPA/US



**Denessa
Moses/DC/USEPA/US**
03/28/2007 12:58 PM

To Alexandra Sullivan/DC/USEPA/US, Alyssa
Quarforth/DC/USEPA/US
cc

Subject Fw: Office Rating Model Changes - Additional Questions

More questions from SRA...

----- Forwarded by Denessa Moses/DC/USEPA/US on 03/28/2007 12:57 PM -----



"Mikulka, Kristine"
<Kristine_Mikulka@sra.com>
03/28/2007 12:54 PM

To Denessa Moses/DC/USEPA/US@EPA
cc

Subject Office Rating Model Changes - Additional Questions

Hi Denessa –

I have attached a document that has our new questions and the known outstanding items. I am hoping it will help us track everything. If there are any of the new questions that can be answered that would help us to keep moving forward. Please let me know if you have any questions.

Thanks, Kris

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913



Space Model_OfficeQuestions-Issues.doc

{In Archive} Re: Fw: Office Rating Model Changes - Additional Questions 

Alexandra Sullivan to: Cindy Jacobs

04/02/2007 05:23 PM

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Rating Model Changes - Additional Questions
	Alexandra Sullivan	<i>Aly/Cindy, Could you please look over my responses and let me know</i>
	Cindy Jacobs	<i>Re score changes, I would also like to see: - building name</i>
	Alexandra Sullivan	<i>Cindy, I do not think there is an easy way for SRA to explore</i>
	Alyssa Quarforth	<i>Alexandra, I think your answers look complete given we still need</i>

Cindy,

I do not think there is an easy way for SRA to explore how the new WN technique will impact the scores across the board, however, I will ask.

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

Cindy Jacobs/DC/USEPA/US

Cindy Jacobs/DC/USEPA/US

03/28/2007 03:08 PM

To: Alexandra Sullivan/DC/USEPA/US@EPA

cc: Alyssa Quarforth/DC/USEPA/US@EPA, Michael Zatz/DC/USEPA/US@EPA

Subject: Re: Fw: Office Rating Model Changes - Additional Questions



Re score changes, I would also like to see:

- building name
- date of current rating
- years label(ed)
- we will want analysis of impact on Leaders, but maybe that should be done as a second stage?

Re last question - weather normalization -- are we getting some sense of the impact of making this change universally?

Thanks.

Cindy B. Jacobs
U.S. EPA
ENERGY STAR
(202) 343-9045

Alexandra Sullivan/DC/USEPA/US

**Alexandra
Sullivan/DC/USEPA/US**
03/28/2007 02:54 PM

To Alyssa Quarforth/DC/USEPA/US@EPA, Cindy
Jacobs/DC/USEPA/US@EPA
cc Michael Zatz/DC/USEPA/US@EPA
Subject Re: Fw: Office Rating Model Changes - Additional Questions


Aly/Cindy,

Could you please look over my responses and let me know if you have anything to add?

Cindy, I am particularly interested in your perspective for the question about what information we will want to see in order to assess the score changes. I understand that this may be hard to predicted ahead of time, but we'll have to do our best.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



Phase1 SRA Question 2_Response.doc Template.Changes.xls

Denessa Moses/DC/USEPA/US



**Denessa
Moses/DC/USEPA/US**
03/28/2007 12:58 PM

To Alexandra Sullivan/DC/USEPA/US, Alyssa
Quarforth/DC/USEPA/US
cc
Subject Fw: Office Rating Model Changes - Additional Questions

More questions from SRA...

----- Forwarded by Denessa Moses/DC/USEPA/US on 03/28/2007 12:57 PM -----



"Mikulka, Kristine"
<Kristine_Mikulka@sra.com>

03/28/2007 12:54 PM

To Denessa Moses/DC/USEPA/US@EPA
cc
Subject Office Rating Model Changes - Additional Questions

Hi Denessa –

I have attached a document that has our new questions and the known outstanding items. I am hoping it will help us track everything. If there are any of the new questions that can be answered that would help us to keep moving forward. Please let me know if you have any questions.

Thanks, Kris

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913



Space Model_OfficeQuestions-Issues.doc



Accepted: Meeting To Finalize Office Model & Financial Center Decisions

Tue 04/03/2007 10:00 AM - 11:00 AM

No Location Information

Stuart Brodsky has accepted this meeting invitation

Required: Alyssa Quarforth/DC/USEPA/US@EPA, Michael Zatz/DC/USEPA/US@EPA, Stuart Brodsky/DC/USEPA/US@EPA,

Time zones: This entry was created in a different time zone. The time in that time zone is: Tue 04/03/2007 10:00 AM EDT - 11:00 AM EDT

{In Archive} my spreadsheet--office/garage

Alyssa Quarforth to: Alexandra Sullivan

04/03/2007 11:50 AM

Archive: This message is being viewed in an archive.

View: \$ThreadsEmbed



OfficewGarage_PM_Test01.xls

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6406J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov

{In Archive} OfficewGarage analysis--CORRECTED sqft 

Alyssa Quarforth to: Alexandra Sullivan

04/05/2007 02:18 PM

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Steve's Garage Clacs 02
	Alyssa Quarforth	<i>Attached is Michael's "office w/ garage" analysis with the corrected sqft</i>

Attached is Michael's "office w/ garage" analysis with the corrected sqft for the office space.



OfficewGarage_PM_Test0CORRECTSQFT1.xls

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6406J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov

{In Archive} Updates on Direction about Office

Alexandra Sullivan to: Denessa Moses

04/13/2007 05:29 PM

Archive: This message is being viewed in an archive.

Date	Subject
[REDACTED]	

Denessa,

I had told SRA I would have these updates out this week, so I sent them directly to Kris (copying you), since you were not in today. I hope that is okay!

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



{In Archive} Fw: Office Rating Model Questions

Denessa Moses to: Alexandra Sullivan, Alyssa Quarforth

04/27/2007 08:19 AM

History: This message has been replied to.

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Rating Model Questions
	Alexandra Sullivan	<i>Denessa, Here are responses for SRA. There is no update to the "ou</i>
	Alyssa Quarforth	<i>Alexandra, Because we agree on all the same points, I think one repor</i>
	Alexandra Sullivan	<i>Yes, I think we should definitely keep to one response. The onl</i>

Ladies...

----- Forwarded by Denessa Moses/DC/USEPA/US on 04/27/2007 08:19 AM -----



"Mikulka, Kristine"

<Kristine_Mikulka@sra.com>

To Denessa Moses/DC/USEPA/US@EPA

04/27/2007 08:08 AM

cc

Subject Office Rating Model Questions

Hi Denessa –

I have attached the new and outstanding office rating model questions. We have put the new questions at the top so no one would have to look through the document. Please let me know if you have any questions.

Thanks, Kris

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913



Space Model_OfficeQuestions-Issues_4_26.doc

{In Archive} Re: Fw: Office Rating Model Questions 

Alexandra Sullivan to: Denessa Moses

04/27/2007 09:09 AM

Cc: Alyssa Quarforth

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Rating Model Questions
	Alexandra Sullivan	<i>Denessa, Here are responses for SRA. There is no update to the "out</i>
	Alyssa Quarforth	<i>Alexandra, Because we agree on all the same points, I think one repor</i>
	Alexandra Sullivan	<i>Yes, I think we should definitely keep to one response. The onl</i>

Denessa,

Here are responses for SRA. There is no update to the "outstanding" issues under 1.7, because at this point they all depend on Source conversions. I am working to finalize this ASAP! In fact, Aly and I just got some things for our contractors, so we will review these and get moving.

As far as the other questions, I will also copy them into the master document under that numbering scheme, which I think is a little clearer because questions don't change each time (for example, what they refer to as Question 1.3 is numbered 2.3 in their document).

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



P1_SRAQuestions3_Response.doc

Denessa Moses/DC/USEPA/US



**Denessa
Moses/DC/USEPA/US**
04/27/2007 08:19 AM

To Alexandra Sullivan/DC/USEPA/US, Alyssa
Quarforth/DC/USEPA/US
cc
Subject Fw: Office Rating Model Questions

Ladies...

----- Forwarded by Denessa Moses/DC/USEPA/US on 04/27/2007 08:19 AM -----



"Mikulka, Kristine"



<Kristine_Mikulka@sra.com>

To Denessa Moses/DC/USEPA/US@EPA

cc

04/27/2007 08:08 AM

Subject Office Rating Model Questions

Hi Denessa –

I have attached the new and outstanding office rating model questions. We have put the new questions at the top so no one would have to look through the document. Please let me know if you have any questions.

Thanks, Kris

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913



Space Model_OfficeQuestions-Issues_4_26.doc

{In Archive} Re: Fw: Office Rating Model Questions 

Alyssa Quarforth to: Alexandra Sullivan

04/27/2007 09:22 AM

History: This message has been replied to.

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Rating Model Questions
	Alexandra Sullivan	<i>Denessa, Here are responses for SRA. There is no update to the "ou</i>
	Alyssa Quarforth	<i>Alexandra, Because we agree on all the same points, I think one repor</i>
	Alexandra Sullivan	<i>Yes, I think we should definitely keep to one response. The onl</i>

Alexandra,

Because we agree on all the same points, I think one reponse document back to SRA will be suffice. It seems as though there is nothing new to us in their questions or concerns.

Aly

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6406J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov
Denessa Moses/DC/USEPA/US



**Denessa
Moses/DC/USEPA/US**
04/27/2007 08:19 AM

To Alexandra Sullivan/DC/USEPA/US, Alyssa
Quarforth/DC/USEPA/US
cc
Subject Fw: Office Rating Model Questions

Ladies...

----- Forwarded by Denessa Moses/DC/USEPA/US on 04/27/2007 08:19 AM -----



"Mikulka, Kristine"
<Kristine_Mikulka@sra.com>
04/27/2007 08:08 AM

To Denessa Moses/DC/USEPA/US@EPA
cc
Subject Office Rating Model Questions

Hi Denessa –

I have attached the new and outstanding office rating model questions. We have put the new questions at the top so no one would have to look through the document. Please let me know if you have any questions.

Thanks, Kris

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913



Space Model_OfficeQuestions-Issues_4_26.doc

{In Archive} Re: Fw: Office Rating Model Questions 

Alexandra Sullivan to: Alyssa Quarforth

04/27/2007 09:25 AM

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Rating Model Questions
	Alexandra Sullivan	<i>Denessa, Here are responses for SRA. There is no update to the "ou</i>
	Alyssa Quarforth	<i>Alexandra, Because we agree on all the same points, I think one repor</i>
	Alexandra Sullivan	<i>Yes, I think we should definitely keep to one response. The onl</i>

Yes,

I think we should definitely keep to one response. The only reason I didn't send this one to you and Cindy for internal review before going to SRA, is because the questions were SO straightforward.

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



{In Archive} Emailing: 497 IDs.xls
Gibbs, Michael to: Alexandra Sullivan

05/03/2007 05:09 PM

History: This message has been replied to.

Archive: This message is being viewed in an archive.

	Gibbs, Michael	Emailing: 497 IDs.xls
	Alexandra Sullivan	<i>Michael, The building that doesn't correspond is ID number 5074.</i>

1 attachment



497 IDs.xls

<<497 IDs.xls>>

The message is ready to be sent with the following file or link attachments:

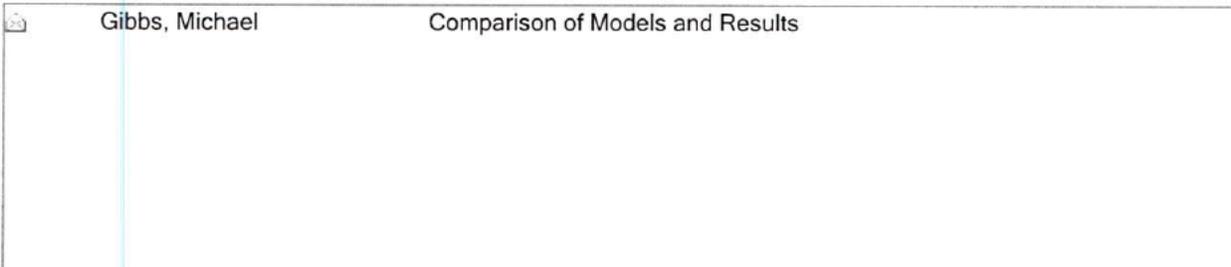
497 IDs.xls

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.



To: Alexandra Sullivan/DC/USEPA/US@EPA,
Cc:
Bcc:
Subject: Comparison of Models and Results
From: "Gibbs, Michael" <MGibbs@icfi.com> - Thursday 05/03/2007 10:07 PM

Archive: This message is being viewed in an archive.



1 attachment



Score Compare.xls

Alexandra:

I did as much as I could this afternoon. Gotta head home.

Attached is a summary comparison file. (Don't worry about the linked files at this point.) It has the "final model" for each of the data sets. When the observations are scored, the refrig coefficients are set to zero.

The data sets are:

215: Filter on FACIL8 and imputed energy (plus everything else)

300: Filter on imputed energy (plus everything else) but NOT Facil8

349: All the usual filters, but NOT the imputed energy filter

498: Not FACIL8 and NOT imputed energy, all other filters used

I have not looked at them carefully. (b) (5)

(b) (5)

(b) (5)

Michael

<<Score Compare.xls>>

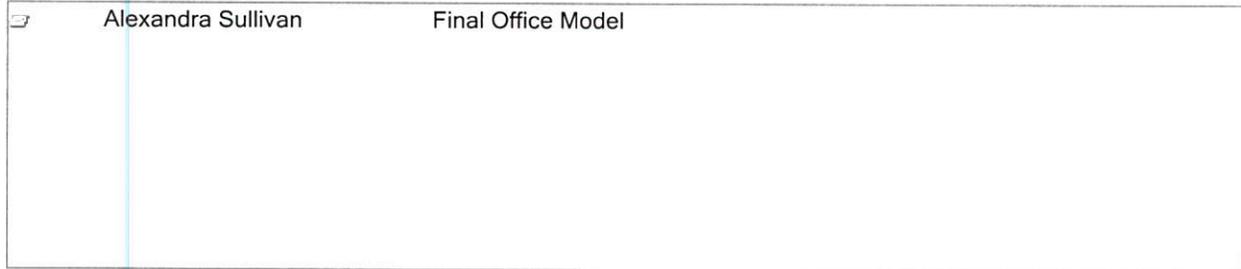
{In Archive} Final Office Model

Alexandra Sullivan to: Kristine_Mikulka

05/04/2007 04:47 PM

Cc: Denessa Moses, Alyssa Quarforth

Archive: This message is being viewed in an archive.



Kris,

Unfortunately a few last minute items caused us to change our mind on some decisions relative to the Office model. Therefore, we want to do one more final QA/QC check internally before we give you the final numbers. We should have everything completed by COB Tuesday.

Sorry for the day!

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

{In Archive} Complete Guidance for the new Office Model

Alexandra Sullivan to: Kristine_Mikulka

05/07/2007 04:58 PM

Cc: Denessa Moses, Alyssa Quarforth, "Murray, Steve", Michael Zatz

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Complete Guidance for the new Office Model
	Denessa Moses	<i>Alexandra/Aly: Thanks for providing such a thorough set of guidance -</i>
	Michael Zatz	<i>Well done to everyone. I know this is far from over, but this is</i>

Kris,

Attached please find a complete version of our Phase 1 Office Model guidance.

This time, there are no more "pending" items highlighted in yellow :)

Please take some time to review and let us know if you have any questions.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



P1_Direction_Updated_20070507.doc OfficeModel_LookupTable.xls Template.Changes.xls



{In Archive} Response -- Re: Complete Guidance for the new Office Model 

Denessa Moses to: Alexandra Sullivan

05/09/2007 02:59 PM

Cc: Alyssa Quarforth, Michael Zatz

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Complete Guidance for the new Office Model
	Denessa Moses	<i>Alexandra/Aly: Thanks for providing such a thorough set of guidance -</i>
	Michael Zatz	<i>Well done to everyone. I know this is far from over, but this is</i>

Alexandra/Aly:

Thanks for providing such a thorough set of guidance - SRA didn't have any follow-up questions this time around.

SRA will have a report to us by **May 25th** detailing the impact of the rating changes. We'll need at least a full week to review - maybe more. I'm recommending that we wait until after we've had a chance to review this information before trying to determine and announce a release date of the revised Office model.

Some of the things we'll need to consider are...

- a general Email to all PM users announcing the model changes
- a customized Email to PM users with "drastic" score changes
- a website announcement of the coming changes
- updating the technical documents on the web
- PM users who are in the process of applying for a label in the tool when the model updates are released
- Target Finder updates
- PM Data Exchange/Automated Benchmark updates
- etc, etc.

This is by no means a comprehensive list -- just a reminder that the trickle down affects of this change will also need to be considered when we start discussing the impacts.

Thanks again for all of your hard work to get us to this point.
- Denessa

Alexandra Sullivan/DC/USEPA/US

**Alexandra
Sullivan/DC/USEPA/US**
05/07/2007 04:58 PM

To: Kristine_Mikulka@sra.com
cc: Denessa Moses/DC/USEPA/US@EPA, Alyssa Quarforth/DC/USEPA/US@EPA, "Murray, Steve" <Steve_Murray@sra.com>, Michael Zatz/DC/USEPA/US@EPA
Subject: Complete Guidance for the new Office Model

Kris,

Attached please find a complete version of our Phase 1 Office Model guidance.

This time, there are no more "pending" items highlighted in yellow :)

Please take some time to review and let us know if you have any questions.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

[attachment "P1_Direction_Updated_20070507.doc" deleted by Denessa Moses/DC/USEPA/US]
[attachment "OfficeModel_LookupTable.xls" deleted by Denessa Moses/DC/USEPA/US] [attachment
"Template.Changes.xls" deleted by Denessa Moses/DC/USEPA/US]

{In Archive} Score Changes - Edited

Alexandra Sullivan to: Alyssa Quarforth

05/29/2007 11:49 AM

Archive: This message is being viewed in an archive.



Aly,

Here is the excel, edited with the table I created.

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



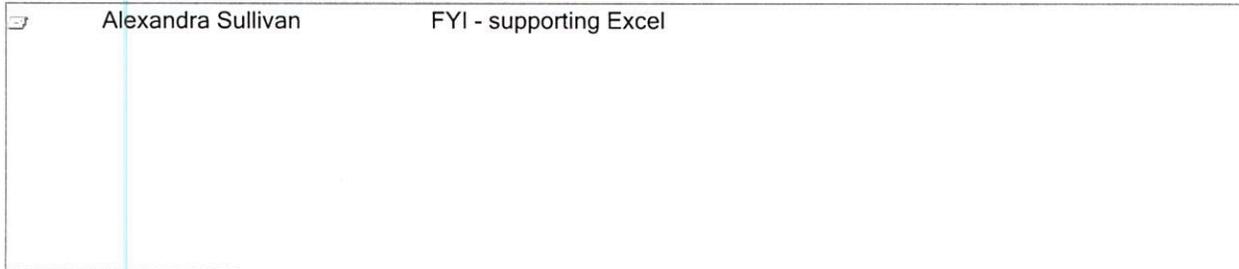
score_comparison_20070525.xls

{In Archive} FYI - supporting Excel

Alexandra Sullivan to: Alyssa Quarforth

05/29/2007 04:44 PM

Archive: This message is being viewed in an archive.



Aly,

Here is another updated excel spreadsheet, which has the calculations I shared with Mike and Cindy in my last email.

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



score_comparison_20070525.xls

{In Archive} Fw: Office model inputs

Cindy Jacobs

to:

Jean Lupinacci, Alexandra Sullivan

06/01/2007 02:15 PM

Hide Details

From: Cindy Jacobs/DC/USEPA/US

To: "Jean Lupinacci" <lupinacci.jean@epa.gov>, "Alexandra Sullivan"

<sullivan.alexandra@epa.gov>,

Archive: This message is being viewed in an archive.

1 Attachment



Office Modeling - Inputs and Measure List 06-01-07.xls

Cindy Jacobs

Sent by EPA Wireless E-Mail Services.

----- Original Message -----

From: "Lisauskas, Sara" [SLisauskas@icfi.com]

Sent: 06/01/2007 02:02 PM

To: Cindy Jacobs

Cc: "Miller, Deborah" <DEMiller@icfi.com>; "Gamble, Dean" <DGamble@icfi.com>; "Schulte, Andrew" <ASchulte@icfi.com>

Subject: Office model inputs

Cindy,

Attached is a file with more detail on the inputs used for the office model. The cells highlighted in blue are those that we changed from the eQUEST prototype. The last worksheet also includes the measure list, divided into the areas of O&M/Retrocommissioning, Lighting, and Equipment Upgrades. We can review and tweak the inputs and measures as necessary.

Sara

Sara Lisauskas

ICF International

978-658-1650

slisauskas@icfi.com



Accepted: Meeting to Discuss Status of Rating Change Reports

Fri 06/08/2007 1:00 PM - 2:00

PM

Location: Mike's Office

Michael Zatz has accepted this meeting invitation

📌 Can I eat some lunch while we talk?

Required: Alyssa Quarforth/DC/USEPA/US@EPA, Michael Zatz/DC/USEPA/US@EPA,

Time zones: This entry was created in a different time zone. The time in that time zone is: Fri 06/08/2007
1:00 PM EDT - 2:00 PM EDT



EPA Meeting to discuss "Key Issues w/ Score Change Report"

Fri 06/08/2007 1:00 PM - 1:30

PM

Attendance is **required** for Alexandra Sullivan

Chair: Denessa Moses/DC/USEPA/US

No Location Information

Required:	Alexandra Sullivan/DC/USEPA/US, Michael Zatz/DC/USEPA/US
-----------	--

Description

Let's meet in Mike's office.

Personal Notes



Meeting with SRA to discuss QA/QC concerns with model development

Fri 06/08/2007 1:30 PM - 2:00 PM

Attendance is **required** for Alexandra Sullivan

Chair: Denessa Moses/DC/USEPA/US

Rooms: 1310L Room 956/DC-1310L-OAR@EPA

Required:	Alexandra Sullivan/DC/USEPA/US, Kristine_Mikulka@sra.com, Michael Zatz/DC/USEPA/US
-----------	--

Description

Meeting in Conf Rm 956 at 9:30, prior to our Campus meeting.

Personal Notes



Accepted: Meeting to Discuss Status of Rating Change Reports

Fri 06/08/2007 1:00 PM - 2:00

PM

Location: Mike's Office

Alyssa Quarforth has accepted this meeting invitation

Required: Alyssa Quarforth/DC/USEPA/US@EPA, Michael Zatz/DC/USEPA/US@EPA,



Call w/ SRA to discuss Office model guidance from EPA

Wed 06/13/2007 8:30 AM - 10:00 AM

Attendance is **required** for Alexandra Sullivan

Chair: **Denessa Moses/DC/USEPA/US**

Rooms: **1310L Room 957/DC-1310L-OAR@EPA**

Required:	Alexandra Sullivan/DC/USEPA/US, Alyssa Quarforth/DC/USEPA/US
-----------	--

Description

Kris, please call us at 8:30 on Wed in conf rm 957 at (202) 343-9557.

Personal Notes

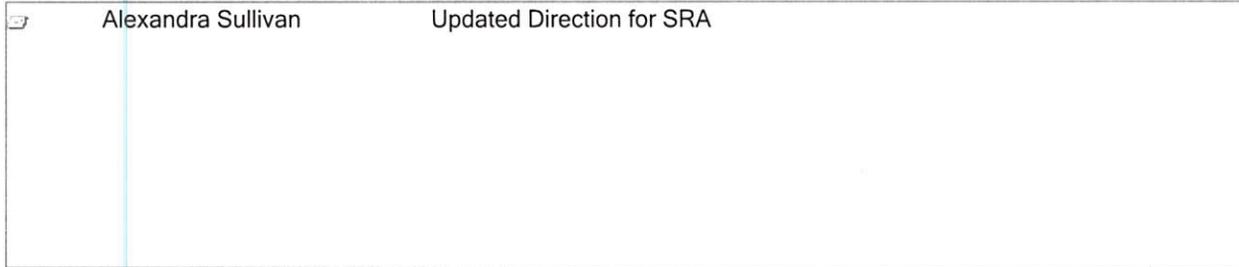
{In Archive} Updated Direction for SRA

Alexandra Sullivan to: Denessa Moses

06/14/2007 08:44 AM

Cc: Alyssa Quarforth, Michael Zatz

Archive: This message is being viewed in an archive.



Denessa,

Here is an updated version of the direction document. I've added 5 notes (all in bold/red) to reflect the items that we identified during yesterday's meeting. Could you please forward to SRA?

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



P1_Direction_Updated_20070614.doc

{In Archive} Document with corrected date

Alexandra Sullivan to: Denessa Moses

06/14/2007 02:41 PM

Cc: Kristine_Mikulka, Alyssa Quarforth

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Document with corrected date
---	--------------------	------------------------------

Denessa/Kris,

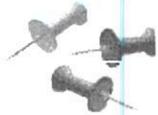
I am resending the annotated document from this morning. The date is now populated with the date the document was last saved (June 14).

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



P1_Direction_Updated_20070614.doc



{In Archive} Expected delivery date of revised score change report...

Denessa Moses to: Alexandra Sullivan, Alyssa Quarforth

06/15/2007 02:45 PM

Cc: Michael Zatz, Kristine_Mikulka

Archive: This message is being viewed in an archive.

Date	Subject

FYI, SRA will have the revised score change report to us by the end of next week (June 22nd). Steve Murray is making changes as a result of the issues clarified during our meeting this past Wed. to discuss the Office model guidance document, and will finish up the report over the weekend and hand it over to another SRA developer, Ami Glasberg by COB, Mon, June 18th. Ami will take the next few days QA/QCing the report. Assuming all goes well, we will have the report no later than Fri, June 22nd (maybe sooner).

- Denessa



{In Archive} Score comparison report: Office/Bank/Courthouse

Murray, Steve to: Alexandra Sullivan

06/18/2007 12:47 PM

Cc: "Mikulka, Kristine", Denessa Moses

History: This message has been replied to.
Archive: This message is being viewed in an archive.

Date	From	Subject
06/18/2007 12:59 PM	Alexandra Sullivan	Re: Score comparison report: C

Hi Alexandra:

Quick question for you on the new score comparison report, which we're Q/A-ing now:

The previous version I sent had the attributes for Banks, Courthouse and Offices listed separately (Bank Floor Space, Bank PCs, Office Floor Space, Office PCs, etc). The new report will treat each of those as "the same space type" – in the actual calculation of the benchmark rating. However, I am not sure if you still want the attributes themselves listed separately in that report (recognizing that the calculation engine is treating them the "correct" way).

Would you prefer that each category of Office have its attributes listed separately, or should they all be combined into the Office attributes? And if they are combined, how will you be able to determine on your end if a building qualifies for the "SmallBank" designation?

Since the answer to this question changes the layout of a couple thousand buildings on that report, it's somewhat vital that we know the answer to this ASAP.

Thanks,
Steve

{In Archive} Re: Score comparison report: Office/Bank/Courthouse 

Alexandra Sullivan to: Murray, Steve

06/18/2007 12:59 PM

Cc: Denessa Moses, "Mikulka, Kristine"

Archive: This message is being viewed in an archive.

Date	From	Subject
06/18/2007 12:59 PM	Alexandra Sullivan	Re: Score comparison report: Office/Bank/Courthouse

Steve,

Please keep the attributes listed separately. This will enable us to drill down into the score changes. If you are also able to add fields for the total "combined" office, that would be useful, though it is not essential.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

"Murray, Steve" <Steve_Murray@sra.com>



"Murray, Steve"
<Steve_Murray@sra.com>
06/18/2007 12:47 PM

To: Alexandra Sullivan/DC/USEPA/US@EPA
cc: "Mikulka, Kristine" <Kristine_Mikulka@sra.com>, Denessa Moses/DC/USEPA/US@EPA
Subject: Score comparison report: Office/Bank/Courthouse

Hi Alexandra:

Quick question for you on the new score comparison report, which we're Q/A-ing now:

The previous version I sent had the attributes for Banks, Courthouse and Offices listed separately (Bank Floor Space, Bank PCs, Office Floor Space, Office PCs, etc). The new report will treat each of those as "the same space type" – in the actual calculation of the benchmark rating. However, I am not sure if you still want the attributes themselves listed separately in that report (recognizing that the calculation engine is treating them the "correct" way).

Would you prefer that each category of Office have its attributes listed separately, or should they all be

combined into the Office attributes? And if they are combined, how will you be able to determine on your end if a building qualifies for the "SmallBank" designation?

Since the answer to this question changes the layout of a couple thousand buildings on that report, it's somewhat vital that we know the answer to this ASAP.

Thanks,
Steve

{In Archive} Fw: Office Model Testing Methodology

Denessa Moses

to:

Alexandra Sullivan, Alyssa Quarforth

06/21/2007 10:48 AM

Cc:

zatz.michael

Hide Details

From: Denessa Moses/DC/USEPA/US

To: Alexandra Sullivan/DC/USEPA/US@EPA, Alyssa Quarforth/DC/USEPA/US@EPA,

Cc: zatz.michael@epa.gov

Archive: This message is being viewed in an archive.

1 Attachment



PROPOSED METHOD OF TESTING THE REVISED OFFICE MODEL.doc

-----Forwarded by Denessa Moses/DC/USEPA/US on 06/21/2007 10:46AM -----

To: Denessa Moses/DC/USEPA/US@EPA
From: "Mikulka, Kristine" <Kristine_Mikulka@sra.com>
Date: 06/19/2007 01:12PM
Subject: Office Model Testing Methodology

Hi Denessa -

I thought I had sent this to you already but I could not find it in my e-mail sent items. I wanted to make sure you had this so you would know what Ami will be doing to test the new spreadsheet that we will be sending to EPA this week. Please note that we still be creating our standard test plan and perform full testing in test and staging before final release to production.

Thanks, Kristine

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913



{In Archive} RE: Expected delivery date of revised score change report...

Mikulka, Kristine to: Denessa Moses, Alexandra Sullivan, Alyssa Quarforth 06/21/2007 07:26 PM

Cc: Michael Zatz

Archive: This message is being viewed in an archive.

Date	Subject

All -

I wanted to let everyone know that we will be delayed in getting the report out for review. Ami has been diligently testing and has come up with some items that will be corrected. Ami will finish his testing tomorrow and then Steve will rerun the report over the weekend. Ami will do another round of QA to make sure the corrections were made and that everything else is as expected. We will have the report completed and tested no later than COB Wednesday, June 27.

Sorry for delay.

Kristine

Kristine Mikulka
Project Manager
kristine_mikulka@sra.com
703-284-6913

-----Original Message-----

From: Moses.Denessa@epamail.epa.gov
[mailto:Moses.Denessa@epamail.epa.gov]
Sent: Friday, June 15, 2007 2:45 PM
To: Sullivan.Alexandra@epamail.epa.gov;
Quarforth.Alyssa@epamail.epa.gov
Cc: Zatz.Michael@epamail.epa.gov; Mikulka, Kristine
Subject: Expected delivery date of revised score change report...

FYI, SRA will have the revised score change report to us by the end of next week (June 22nd). Steve Murray is making changes as a result of the issues clarified during our meeting this past Wed. to discuss the Office model guidance document, and will finish up the report over the weekend and hand it over to another SRA developer, Ami Glasberg by COB, Mon, June 18th. Ami will take the next few days QA/QCing the report. Assuming all goes well, we will have the report no later than Fri, June 22nd (maybe sooner).

- Denessa

{In Archive} Game plan for score changes

Alexandra Sullivan to: Alyssa Quarforth

06/26/2007 04:12 PM

Archive: This message is being viewed in an archive.

Date	From	Time	Status	Subject
	Alyssa Quarforth	06/26/2007 04:19 PM		Re: Game plan for score chang
	Alexandra Sullivan	06/26/2007 04:31 PM		Re: Game plan for score
	Alexandra Sullivan	06/26/2007 06:01 PM		Re: Game plan for score

Now that the score change report is available, let's meet to discuss how we are going to approach the analyses. I figure we can plan to talk tomorrow morning, after we have each had a chance to do a preliminary look at the information.

Can you take the lead on the non-office/bank/court buildings and I'll take the lead on the offices/banks/courts? I have divided the rating changes into one tab for each space, if you want me to forward to you in that format.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

{In Archive} Re: Game plan for score changes 

Alyssa Quarforth to: Alexandra Sullivan

06/26/2007 04:19 PM

History: This message has been replied to.

Archive: This message is being viewed in an archive.

	Date	Time	Subject
	Alyssa Quarforth	06/26/2007 04:19 PM	Re: Game plan for score chang
	Alexandra Sullivan	06/26/2007 04:31 PM	Re: Game plan for score
	Alexandra Sullivan	06/26/2007 06:01 PM	Re: Game plan for score

Sounds good. I was just looking at office/bank/court. Send me the file and I will begin looking at the other space types.

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6202J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov
Alexandra Sullivan/DC/USEPA/US

**Alexandra
Sullivan/DC/USEPA/US**
06/26/2007 04:12 PM

To Alyssa Quarforth/DC/USEPA/US@EPA
cc
Subject Game plan for score changes

Now that the score change report is available, let's meet to discuss how we are going to approach the analyses. I figure we can plan to talk tomorrow morning, after we have each had a chance to do a preliminary look at the information.

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Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040

{In Archive} Re: Game plan for score changes 

Alexandra Sullivan to: Alyssa Quarforth

06/26/2007 04:31 PM

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Game plan for score changes
	Alyssa Quarforth	<i>Sounds good. I was just looking at office/bank/court. Send me the file a</i>
	Alexandra Sullivan	<i>Alexandra Sullivan U.S. EPA</i>
	Alexandra Sullivan	<i>Turns out, there is no easy way to do what I did last time. Alex</i>



ChangesbySpace.xls

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

Alyssa Quarforth/DC/USEPA/US

**Alyssa
Quarforth/DC/USEPA/US**
06/26/2007 04:19 PM

To Alexandra Sullivan/DC/USEPA/US@EPA
cc
Subject Re: Game plan for score changes 

Sounds good. I was just looking at office/bank/court. Send me the file and I will begin looking at the other space types.

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6202J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov
Alexandra Sullivan/DC/USEPA/US

**Alexandra
Sullivan/DC/USEPA/US**
06/26/2007 04:12 PM

To Alyssa Quarforth/DC/USEPA/US@EPA
cc

Subject Game plan for score changes

Now that the score change report is available, let's meet to discuss how we are going to approach the analyses. I figure we can plan to talk tomorrow morning, after we have each had a chance to do a preliminary look at the information.

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Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

{In Archive} Re: Game plan for score changes 

Alexandra Sullivan to: Alyssa Quarforth

06/26/2007 06:01 PM

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Game plan for score changes
	Alyssa Quarforth	<i>Sounds good. I was just looking at office/bank/court. Send me the file a</i>
	Alexandra Sullivan	<i>Alexandra Sullivan U.S. EPA</i>
	Alexandra Sullivan	<i>Turns out, there is no easy way to do what I did last time. Alex</i>

Turns out, there is no easy way to do what I did last time.



score_comparison_20070525.xls

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

Alyssa Quarforth/DC/USEPA/US

**Alyssa
Quarforth/DC/USEPA/US**
06/26/2007 04:19 PM

To: Alexandra Sullivan/DC/USEPA/US@EPA
cc
Subject: Re: Game plan for score changes 

Sounds good. I was just looking at office/bank/court. Send me the file and I will begin looking at the other space types.

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6202J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov
Alexandra Sullivan/DC/USEPA/US

**Alexandra
Sullivan/DC/USEPA/US**

06/26/2007 04:12 PM

To Alyssa Quarforth/DC/USEPA/US@EPA

cc

Subject Game plan for score changes

Now that the score change report is available, let's meet to discuss how we are going to approach the analyses. I figure we can plan to talk tomorrow morning, after we have each had a chance to do a preliminary look at the information.

Can you take the lead on the non-office/bank/court buildings and I'll take the lead on the offices/banks/courts? I have divided the rating changes into one tab for each space, if you want me to forward to you in that format.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



Discuss Ratings Change Report

Tue 07/03/2007 3:00 PM - 4:00 PM

Attendance is **required** for Alexandra Sullivan
Chair: Michael Zatz/DC/USEPA/US

No Location Information

Required:

Alexandra Sullivan/DC/USEPA/US@EPA, Alyssa Quarforth/DC/USEPA/US@EPA

Description

Personal Notes

{In Archive} New office score change tables

Alyssa Quarforth to: Alexandra Sullivan

07/03/2007 04:55 PM

History: This message has been replied to.

Archive: This message is being viewed in an archive.

	Alyssa Quarforth	New office score change tables
	Alexandra Sullivan	<i>Aly, Thanks. Please forward this table to Mike. In your email to Mile,</i>

I have not done any analysis yet on these buildings but attached is the raw data of new tables we were just discussing in Mike's office.



NewScoreDropsBelow75.xls

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6202J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov

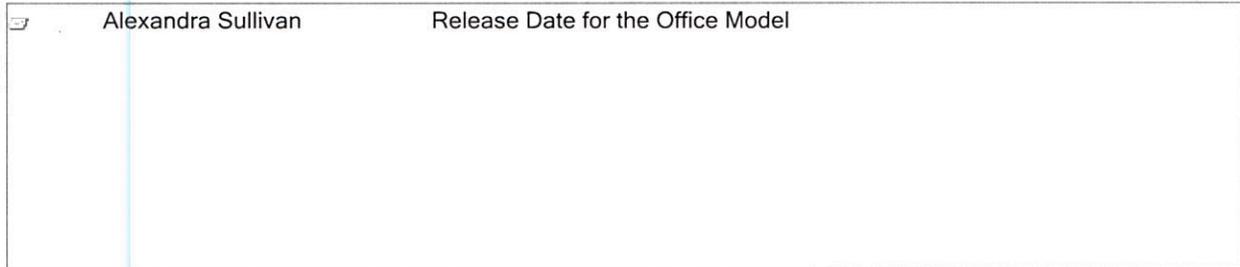
{In Archive} Release Date for the Office Model

Alexandra Sullivan to: Denessa Moses

07/03/2007 04:55 PM

Cc: Alyssa Quarforth, Michael Zatz

Archive: This message is being viewed in an archive.



Denessa,

This month we plan to send a email to all PM users to alert them of the upcoming offices changes, and in this email we want to provide an exact release date.

We would like to set the date at ***September 1, 2007***

However, we do not want to go public with this date unless we are confident that we can meet the deadline. So, can you please confer with SRA to determine if this is a reasonable date?

- Does a date of September 1 allow adequate development time for SRA?
- What are their requirements to make that deadline (i.e. are there items that they need from us?)
- When they agree that September 1 is a reasonable goal, are there any assumptions that we should know about? (i.e. are they assuming that EPA will meet certain deadlines, or that EPA will not change any of the methodology that was used to generate the most recent score change report?)

Please let us know what SRA thinks about this as a development plan.

Thank you,
Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

{In Archive} Re: Largest Score Changes 

Alexandra Sullivan to: Alyssa Quarforth

07/05/2007 01:55 PM

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	<i>I'm switching my days. If you're not able to call in, you don't need to worry about it.</i>
	Alyssa Quarforth	<i>Ok, so I took a look at those large score change buildings and understand that you're switching your days.</i>
	Alexandra Sullivan	<i>Aly, For the ones with a large decrease, all but one have a large increase.</i>

I'm switching my days. If you're not able to call in, you don't need to worry about it.

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

Alyssa Quarforth/DC/USEPA/US

**Alyssa
Quarforth/DC/USEPA/US**
07/05/2007 01:28 PM

To Alexandra Sullivan/DC/USEPA/US@EPA
cc

Subject Re: Largest Score Changes 

I meant to ask you -- are you calling in for the call with Walt and his partner next friday or are you switching your fridays?

-A

Alyssa Quarforth
US EPA
ENERGY STAR
Mail Code: 6202J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov



Re: Fw: RE: Defining occupied hours versus people 
Stephanie Plummer to: Alexandra Sullivan

05/15/2012 04:04 PM

	Sender	Sender	Date			Subject
	Alexandra Sullivan	Alexandra Sullivan	05/15/2012 02:39 PM			Fw: RE
	Stephanie Plummer	Stephanie Plummer	05/15/2012 02:43 PM			F
	Alexandra Sullivan	Alexandra Sullivan	05/15/2012 02:46 PM			
	Stephanie Plummer	Stephanie Plummer	05/15/2012 03:54 PM			

Thanks.



Score calculation in buildings with data center

Jenny Stephenson to: Alexandra Sullivan

05/21/2012 12:17 PM

History: This message has been replied to.

	Sender	Sender	Date		Subject
	Jenny Stephenson	Jenny Stephenson	05/21/2012 12:17 PM		Score c
	Alexandra Sullivan	Alexandra Sullivan	05/22/2012 10:52 AM		F
	Jenny Stephenson	Jenny Stephenson	05/22/2012 10:55 AM		

Hi Alexandra,

I've looked through the technical methodology, FAQs, quick start guide, and a few old presentations but I can't seem to find where we talk about how we calculate the score for multi-use buildings with data center space. Do you know if this is written up anywhere? If so, can you please share it with me?

Thanks,
Jenny

Jenny Stephenson
U.S. EPA | ENERGY STAR Commercial Buildings Program
stephenson.jenny@epa.gov
202-343-9165



CELEBRATING
20 YEARS OF
ENERGY STAR



Re: Score calculation in buildings with data center

Jenny Stephenson to: Alexandra Sullivan

05/22/2012 10:55 AM

	Sender	Sender	Date		Subject
	Jenny Stephenson	Jenny Stephenson	05/21/2012 12:17 PM		Score c
	Alexandra Sullivan	Alexandra Sullivan	05/22/2012 10:52 AM		F
	Jenny Stephenson	Jenny Stephenson	05/22/2012 10:55 AM		

Alexandra,

This is perfect. Thanks!

Jenny

Jenny Stephenson
U.S. EPA | ENERGY STAR Commercial Buildings Program
stephenson.jenny@epa.gov
202-343-9165



Alexandra Sullivan Jenny, We do not have a specific reference on...

05/22/2012 10:52:39 AM

From: Alexandra Sullivan/DC/USEPA/US
To: Jenny Stephenson/DC/USEPA/US@EPA
Date: 05/22/2012 10:52 AM
Subject: Re: Score calculation in buildings with data center

Jenny,

We do not have a specific reference on this topic for Data Centers in particular. However, Section IX of our standard methodology addresses how spaces are combined in general:
http://www.energystar.gov/ia/business/evaluate_performance/General_Overview_tech_methodology.pdf?5881-702a

As you will see in that description, the process for two ratable spaces is to create a combined total predicted energy for the building using the regression models for each space type that is present. Then, the actual energy for the whole building is compared with this combined total prediction. This process is the same regardless of what ratable types are present types. The only unique thing about data center is that the predicted energy for a data center space is equal to the predicted PUE multiplied by the IT energy, whereas for other spaces you predict EUI and then multiply EUI by the square foot.

To give you some more background, below are more detailed steps. I wouldn't forward these on to a user as the first means of explaining it. However, if they review the methodology and have additional

questions, this is perfectly acceptable to share.

* * * * *

Basic Example, Mixed Use with Office & Retail:

1. Compute predicted Office EUI
2. Multiply predicted Office EUI by Office square foot to get predicted Office Energy
3. Compute predicted Retail EUI
4. Multiply predicted Retail EUI by Retail square foot to get predicted Retail Energy
5. Add together predicted Office and Retail Energy (Steps 2 and 4) to get total Predicted Energy
6. Compute an efficiency ratio as: actual energy (from bills) divided by predicted energy (Step 5)
7. Create a Building Lookup Table - For each score (1-to-100) compute the required ratio by taking the average value of the ratio from the Retail Lookup and the ratio from the Office Lookup weighted by the percent of predicted energy (e.g. the office percent of predicted energy is Step 2/Step 5 and the retail percent of predicted energy is Step 4/Step 5; these percents are used to weight the average between the standard Retail and Office lookup tables)
8. Lookup the ratio (Step 6) in the lookup table (Step 7) to get the 1-to-100 score.

PUE Example, Mixed Use with Office & Data Center:

1. Compute predicted Office EUI
2. Multiply predicted Office EUI by Office square foot to get predicted Office Energy
3. Compute predicted Data Center PUE
4. Multiply predicted Data Center PUE by Data Center Annual IT Energy to get predicted Data Center Energy
5. Add together predicted Office and Data Center Energy (Steps 2 and 4) to get total Predicted Energy
6. Compute an efficiency ratio as: actual energy (from bills) divided by predicted energy (Step 5)
7. Create a Building Lookup Table - For each score (1-to-100) compute the required ratio by taking the average value of the ratio from the Data Center Lookup and the ratio from the Office Lookup weighted by the percent of predicted energy (e.g. the Office percent of predicted energy is Step 2/Step 5 and the Data Center percent of predicted energy is Step 4/Step 5; these percents are used to weight the average between the standard Data Center and Office lookup tables)
8. Lookup the ratio (Step 6) in the lookup table (Step 7) to get the 1-to-100 score.

* * * * *

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov

-----Jenny Stephenson/DC/USEPA/US wrote: -----
To: Alexandra Sullivan/DC/USEPA/US@EPA
From: Jenny Stephenson/DC/USEPA/US
Date: 05/21/2012 12:17PM
Subject: Score calculation in buildings with data center

Hi Alexandra,

I've looked through the technical methodology, FAQs, quick start guide, and a few old presentations but I can't seem to find where we talk about how we calculate the score for multi-use buildings with data center

space. Do you know if this is written up anywhere? If so, can you please share it with me?

Thanks,
Jenny

Jenny Stephenson
U.S. EPA | ENERGY STAR Commercial Buildings Program
stephenson.jenny@epa.gov
202-343-9165





BANK_50 clarification

Frasineanu, Catalin to: Alexandra Sullivan

07/12/2012 02:16 PM

History:

This message has been replied to.

	Sender	Sender	Date		Subject
	Frasineanu, Catalin	Frasineanu, Catalin	07/12/2012 02:16 PM		BANK_
	Alexandra Sullivan	Alexandra Sullivan	07/12/2012 03:25 PM		F
	Frasineanu, Catalin	Frasineanu, Catalin	07/12/2012 04:09 PM		

Hi Alexandra,

How is the BANK_50 term added to the score equation?

Do we add it once to the OFFICE space after we combine the space types belonging to the OFFICE parent model into one space?

Thank you,
Catalin

Re: questions about building energy star scores

Alexandra Sullivan

to:

John H. Scofield

10/29/2012 12:54 PM

Hide Details

From: Alexandra Sullivan/DC/USEPA/US

To: "John H. Scofield" <jscofiel@oberlin.edu>,

Hi John,

A call at 12:30 on Thursday sounds good to me.

I'll talk to you then,

Alexandra Sullivan

U.S. EPA

ENERGY STAR

Mail Code 6202J

Washington, DC 20460

202.343.9040

sullivan.alexandra@epa.gov

-----"John H. Scofield" <jscofiel@oberlin.edu> wrote: -----

To: Alexandra Sullivan/DC/USEPA/US@EPA

From: "John H. Scofield" <jscofiel@oberlin.edu>

Date: 10/29/2012 12:22PM

Subject: Re: questions about building energy star scores

Alexandra,

I am available between noon and 1:30 PM on Thursday. Meanwhile I'll look over the documents you suggested and review my notes from a few years ago when I think we talked about related topics.

How about I call you at 12:30 PM on Thursday?

thanks,

John

At 11:07 AM 10/29/2012, you wrote:

John,

What is your availability on Thursday? I am free between noon and 3pm. Hopefully there is a slot in there that works for you.

There are a few resources you might find helpful.

1 - General Technical Overview

(http://www.energystar.gov/ia/business/evaluate_performance/General_Overview_tech_methodology.pdf?fa98-96f2)

This document explains how different building types are combined.

2 - Office Technical Document

(http://www.energystar.gov/ia/business/evaluate_performance/office_tech_desc.pdf?78b1-3260)

This document lists the equation we use to compute the ES score for offices. A building with 3x as many computers is not allowed to use 3x as much energy, but it is allowed to use more energy, according to the correlation between energy and computers in Offices.

Thanks,

Alexandra Sullivan

U.S. EPA

ENERGY STAR

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 202.343.9040
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-----"John H. Scofield" <jscofiel@oberlin.edu> wrote: -----
 To: Alexandra Sullivan/DC/USEPA/US@EPA
 From: "John H. Scofield" <jscofiel@oberlin.edu>
 Date: 10/29/2012 10:51AM
 Subject: Re: questions about building energy star scores

Alexandra,

thanks for the quick reply. Clearly the issues you raise must be factors. I can't say it makes sense yet, but with some conversation I hope I can get it.

If a building is a data center -- then I see how it will use more energy than an office building. And presumably a data center will have its ES score calculated by comparing it with other data centers, though I am not sure what the metrics will be (per customer severed, per server, per terrabyte)? Seems to me this gets tough to make apples-to-apples comparison.

But to have a large office building include a data center -- now I don't know how you properly compare its energy use with other office buildings.

I am also confused as to how the number of computers in a building are used to determine energy star scores. If I decide to put 3 computers in each office rather than one -- does that somehow give me license to use 3X more energy than used in another building that only has 1 computer per office? All of this gets very confusing for me..

I look forward to chatting.

We will need to arrange a time as I am tied up in classes at various times.

thanks,
 John

At 10:39 AM 10/29/2012, you wrote:

John,

My initial reaction to your question is that Adobe likely has data centers in their offices, as would certain buildings in New York City. The average data center can have an EUI that is more than 10x that of an office. So, when this is averaged into the Office, the Site EUI (or source EUI) will be much higher than it is for an Office without a data center. The ENERGY STAR score does account for all uses in the building, including Data Center. Therefore, through our algorithms, an office with a data center would be predicted to use more energy than an office without a data center. In that case, it would be possible to have a seemingly high Site EUI but still earn a high score.

Other factors like hours, PCs, and workers will affect overall performance, but not as much as Data Centers. So, for example an office open 24 hours per day with more works or computers per square foot will have a higher energy than an office with fewer hours, workers, and PCs. These operating patterns are also likely to be common in NYC, where you have banking companies operating long hours for international trading. The longer hours and higher density of workers/PCs will be higher than typical smaller office buildings in other parts of the country.

Does this make sense?

I am not in the office today, but I can try to give you a call later in the week.

Thanks,

Alexandra Sullivan

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-----"John H. Scofield" <jscofiel@oberlin.edu> wrote: -----
To: Alexandra Sullivan/DC/USEPA/US@EPA
From: "John H. Scofield" <jscofiel@oberlin.edu>
Date: 10/29/2012 10:27AM
Subject: questions about building energy star scores

Alexandra,

Greetings. I think we chatted about building energy star scores several years back when I was working on the American Physical Society's Energy Efficiency Study in 2008.

I recently read an article in ASHRAE's High Performing Buildings journal about 6-7 large buildings owned by Adobe in San Jose, CA. Here is a link to the article

<http://www.hpbmagazine.org/case-studies/office-institutional/adobe-headquarters-san-jose-ca>

The article says that all of these buildings have Energy Star scores of 99 or 100. But the article also goes on to say that the buildings have annual site and source energy intensities of 179 and 350 kBtu/sf, respectively. Now I have recently been looking at energy performance of a lot of office buildings in New York City -- and the these numbers seem significantly higher than the average (averages for NYC office buildings are 105 and 255, respectively).

So I am trying to understand how a building can be considered to use less energy than 99% of comparable buildings and have such a high EUI? What details regarding building useage (hours, occupants, etc.) can make this building look so good?

This raises more general questions about the ES score and how to interpret it for a collection of buildings.

Is there a time we could talk by phone about these issues?

the best number to reach me is 440-775-5208.

thanks,
John

=====
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Re: follow up about office/data center 

Alexandra Sullivan to: John H. Scofield

11/16/2012 08:05 AM

	John H. Scofield	follow up about office/data center
	Alexandra Sullivan	<i>John, I'm on my way to a series of morning meetings, but here are some</i>
	John H. Scofield	<i>Alexandra, thanks again for your rapid response. I'll look over the</i>
	Alexandra Sullivan	<i>Hi John,</i>
	John H. Scofield	<i>Alexandra, thank you so much for your comments a</i>

Thank you! I plan to.

Alexandra Sullivan

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Sent by EPA Wireless E-Mail Services.

From: "John H. Scofield" [jscofiel@oberlin.edu]
Sent: 11/16/2012 07:59 AM EST
To: Alexandra Sullivan
Subject: Re: follow up about office/data center

Thanks -- enjoy your week off.

John

At 07:56 AM 11/16/2012, you wrote:

John,

My initial inclination is to say that you should use the word median - because by definition a score at the 50th percentile is at the median.

However, upon second thought, the scores should be uniformly distributed (1 percentile at each point) and therefore, I think the mean should also be 50 (same number of buildings should have 1 as have 100, same number of buildings should have 2 as have 99, etc).

So, because it is a uniform distribution, the median and mean should both be about 50.

Thanks,
AES

Alexandra Sullivan

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Sent by EPA Wireless E-Mail Services.

From: "John H. Scofield" [jscofiel@oberlin.edu]
Sent: 11/16/2012 07:28 AM EST
To: Alexandra Sullivan
Subject: Re: follow up about office/data center

Alexandra,

Quick question. Is this an accurate statement.

It is presumed that if ENERGY STAR scores for all eligible U.S. buildings were calculated the mean of this collection of scores would be 50. (or should this read median?)

I know that it is not possible to perform this "thought" experiment, but I think this is the tacit assumption that people have when they calculate mean ES scores for, say a set of buildings.

thanks,
John

At 10:41 AM 11/15/2012, you wrote:

Hi John,

I think this is a good question, and it is something EPA has discussed. In the end, there is no accepted process for quantifying the "computations" performed by a computer, nor for ascribing value to those computations. For example, I might send 50 emails per day, but I could possibly do my job more efficiently (and with less energy) if I were able to only send 25 emails per day. Because there is no way to quantify the amount of work done by PCs or the inherent value of that work, we do rely on a simple count and accept this count as a business constraint on the organization.

I do not think the analogy to DVD/DVRs is exactly the same. In that case there are clearly personal

preferences that go into the homeowner's decision. No person absolutely needs to have a DVD or DVR. But, in the case of a commercial building, pretty much every worker needs to have a computer in order to effectively perform his/her job. So, there are business constraints that come into play. Similarly, some companies, like IT, defense contracting or financial trading, may have certain employees who have two or three computers in their work space. For example, DOD employees may be required to keep classified information on separate computers than non-classified information. There is no single objective way to assess this need.

This challenge is not simply for PCs, but could be extended to any characteristic (Hours, Workers, etc). For example, maybe one building is open longer hours. You might ask whether those longer hours are necessary. But, upon research we learn that by being open longer hours they are able to close another office in a different time zone. Therefore, although the net use of energy in that building has gone up, the net use of energy for the company has gone down.

This is something we have considered. In the end, we are trying to perform a basic peer comparison to help with building management. We take certain aspects of business activity (Workers, PCs, Hours) and use these to normalize. There is no way for us to quantify how many PCs, Hours, or Workers are needed for a company to most effectively perform its business. Therefore, we accept these characteristics as basic business constraints for the building and organization.

I hope that helps,

Alexandra Sullivan

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sullivan.alexandra@epa.gov



"John H. Scofield" ---11/15/2012 09:54:42 AM---Alexandra, I do have a philosophical question about the way

From:"John H. Scofield" <jscofiel@oberlin.edu>
To:Alexandra Sullivan/DC/USEPA/US@EPA
Date:11/15/2012 09:54 AM
Subject:Re: follow up about office/data center

Alexandra,

I do have a philosophical question about the way that Energy Star handles computer usage and data centers.

As I understand it, if a building uses more computers than average (compared to the theoretical building) then ES allows for more energy usage. But this does not in any way discourage the use of more computers. Building A (or rather company A that functions within Building A) might be able to accomplish the same amount

of productivity as building B but do it with fewer pc.s -- maybe by constantly replacing computers with newer ones, more efficient ones, more powerful ones. Or maybe there are other strategies that reduce the number of pc's -- for instance, maybe workers use powerful laptop computers which must serve as the office computer rather than to have both.

I guess what I see is a scoring system that accepts the decision to use more computers (despite the energy consequences) rather than focusing only on the energy use. Suppose, for instance, that I decide to drive a truck rather than a compact car. Imagine a personal EnergyStar score that evaluates my gas mileage relative to other trucks -- rather than in comparison with other commuters. My truck is "judged to be" more efficient than the average truck (say it is a hybrid) so I get a high ES score. But I could just as well commute with a compact car that is less efficient than the average compact car and save lots of gas.

Or again, consider an Energy Star score for houses that asks me how many cable boxes or DVR's that I have and essentially allots me more energy (for the same ES score) because my house has 4 DVR's compared to the standard house that has none. It is true that given my choice to own 4 DVR's I can expect my energy use to go up -- but should the ES simply accept my choices even though the result in higher energy consumption?

I guess I am curious what conversations and discussion there are there at the EPA about these issues.

I trust you saw yesterday's press release from the USGBC about high ES scores for LEED buildnigs in the San Francisco area.

John

At 04:23 PM 11/14/2012, you wrote:

Good luck in the soccer tournament!

Alexandra Sullivan U.S. EPA ENERGY STAR Mail Code 6202J Washington,
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"John H. Scofield" ---11/14/2012 04:11:17 PM---Alexandra, thank you so much for your comments and From:"John H. Scofield" <jscofiel@oberlin.edu> To:Alexandra

Sullivan/DC/USEPA/US@EPA Date:11/14/2012 04:11 PM Subject:Re: follow up about office/data center
Alexandra, thank you so much for your comments and suggestions. I am on a bus at the moment headed with my son's soccer team to NC. I'll have a chance to look at these carefully this week and make appropriate

changes. I just skimmed the comments so far. All of your suggestions seem reasonable and I expect I will incorporate most. More later, John At 03:51 PM 11/14/2012, you wrote:

Hi John, Thanks for sharing this early draft. I think these findings are certainly interesting - the NYC data has opened up a number of new opportunities and probably a number of new questions, too. Since I know you are still working on the details of the paper, I won't offer specific comments by page, but rather stick to a few overall observations with respect to ENERGY STAR. 1. A few details + The ENERGY STAR score ranges from 1 to 100. It is not possible to earn a zero. So, if you see anything with zero in your data set, you might want to check with NYC. This is probably a NULL value and may have been misreported as zero in their spreadsheet. + Because the 1-to-100 score is a percentile ranking, a score of 50 is probably best called the expected median score (rather than mean). + Because ENERGY STAR is a registered trademark, the official use of the name is in capital letters. Obviously, depending on where you publish this, you may be bound by other style guides or norms. 2. Newer Buildings and the CBECS 2003 Survey On this topic you offer some reasonable hypotheses as to why buildings might be more efficient in 2011 than they were in 2003. However, we do not really have a valid sample to confirm these hypotheses. So, I think that rather than saying "all US Buildings are more efficient than they were in 2003" you might want to consider something less definitive "this data suggest that US buildings now may be more efficient than they were in 2003." I also think that NYC is a place I would expect to have more efficient buildings as compared with other locations. Last year, NYC was #3 in EPA's list of cities with the most ENERGY STAR certified buildings. Also, NYC tends to be dominated by Class A office space, with many premier buildings of major real estate companies. To attract tenants and promote their own sustainability efforts, these are going to be properties that people target for efficiency investments. Finally, LL84 was passed in 2009, so building owners have had time to prepare and may have been motivated to make improvements because they knew their data would be published. Given these considerations, I think it is reasonable to assume that NYC offices might be more efficient than offices in other cities. Therefore, I am not sure whether this data set alone can help you answer the question of whether buildings today are more efficient than they were in 2003. 3. ENERGY STAR Certification In foot note #8 you reference "minimal independent verification" for ENERGY STAR. I think it would be more helpful to the reader to explain what verification is required by EPA before ENERGY STAR certification. Our requirements include a site visit and stamped verification checklist to be completed by a licensed Professional Engineer or Registered Architect. Also, EPA performs additional review and follow-up on applications with unusual data, and EPA also randomly conducts its own independent audits for certain buildings, either by phone or via on-site visits. 4. High Average Scores I understand your concern about the sensitivity of an ENERGY STAR score to inputs on operation (hours, PCs, etc). These operational characteristics have a significant effect on energy consumption, which is why they are incorporated in our score calculations. Obviously, accurate data is required to obtain an accurate score. In considering how this data is entered, I think it is important to be clear that ENERGY STAR metrics and Portfolio Manager are intended to be used by individual buildings as part of strategic management programs to monitor and improve energy. On its own, use of this tool does not (and should not) require independent verification. Because data is self-reported and for much of the country still represents a self-selected sample, EPA does not

consider Portfolio Manager data to be nationally representative, and we do not draw national conclusions from the data. From our perspective, it is up to building owners to enter and track data as they see fit to help with their management. Any programs that leverage Portfolio Manager (e.g. LEED) should have their own verification process, suited to their needs, similar to how we have verification on our ENERGY STAR certification. However, because general benchmarking is not, by definition, for the purpose of public reporting or recognition, we do not have mandatory verification for use of Portfolio Manager. If you have a concern about the data that has been reported to USGBC or NYC, then I think your concern is less about ENERGY STAR Portfolio Manager and more about the data verification requirements associated with those programs. I hope these comments help. I have a somewhat booked schedule as I prepare to be out on vacation next week, but please let me know if you want to follow-up more closely on any of these items. Thanks,

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"John H. Scofield" ---11/13/2012 12:03:05 PM---Alexandra, thanks again for your rapid response. I'll look over the document From:"John H. Scofield" <jscofiel@oberlin.edu> To:Alexandra Sullivan/DC/USEPA/US@EPA Date:11/13/2012 12:03 PM Subject:Re: follow up about office/data center

Alexandra, thanks again for your rapid response. I'll look over the document you suggested and see if I can implement this in Target Finder. Attached is a pdf file with the draft of my NYC LEED article. The discussion and conclusions still need some work and I expect I will do some more work on the intro. But the main thrust of the paper is done with the key figures. Thanks for any comments and suggestions you have to offer. In particular -- flag anything that you disagree with regarding the Energy Star stuff. Please keep this confidential. I am happy to receive your comments in whatever form is convenient -- notes in the pdf-file, telephone call, or any other form that works. thanks, John At 08:25 AM 11/13/2012, you wrote:

John, I'm on my way to a series of morning meetings, but here are some quick answers to your questions. 1 - The description of how two models are combined in a mixed use building is part of our General Technical Overview, see section IX_

http://www.energystar.gov/ia/business/evaluate_performance/General_Overview_tech_methodology.pdf?a449-fd8f2

2 - Yes, you can enter a mixed use Data Center & Office Building into Target Finder. 3 - I'd be happy to give a read of your paper. I am going to be out all of next week. But I'm around this week and would have time to read it over and offer comment on Thursday or Friday. Thanks,

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"John H. Scofield"

---11/13/2012 06:24:31 AM---Alexandra, When we spoke last week I recall that you mentioned that the ES score From:"John H. Scofield" <jscofiel@oberlin.edu> To:Alexandra Sullivan/DC/USEPA/US@EPA Date:11/13/2012 06:24 AM Subject:follow up about office/data center

Alexandra, When we spoke last week I recall that you mentioned that the ES score for a large office building that contains, within it, a data center, is some kind of "hybrid" score that is related to the combined scores of the office and data center portion. I recall thinking that such a method would yield a score that nearly always reflected the efficiency of the data center portion rather than the rest of the office building. I am beginning to wonder if this might help explain the rather high ES scores for the NYC office buildings I am looking at. Can you steer me to a document that explains how this "hybrid" scoring system works? I want to learn more about it. Also, is it possible for me to use Target Finder to see how this works for an office building that has a data center within it? Final question. Would you be interested in giving a quick read to my draft paper on NYC LEED buildings and providing some feedback? It is about 12 pages long. I want to submit it in the next two weeks so would need feedback on that time frame to make corrections to the draft. thanks, John thanks, John

=====
John H.
Scofield Department of Physics & Astronomy 110
N. Professor St. Oberlin College Oberlin, OH
44074 email: John.Scofield@oberlin.edu voice:
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[attachment "Scofield NYC LEED draft.pdf" deleted by
Alexandra Sullivan/DC/USEPA/US]



Re: a follow up question
John H. Scofield
to:
Alexandra Sullivan
11/27/2012 05:29 PM
Hide Details
From: "John H. Scofield" <jscofiel@oberlin.edu>
To: Alexandra Sullivan/DC/USEPA/US@EPA,

1 Attachment



discussion.doc

Alexandra,

Thanks for the link. I'll see if I can cross-list my buildings.

So here is my thought. In 2003 a linear regression that looked at how much office building annual source energy changed with number of pc's found the coefficient you now use which can be expressed as 173 Watts per pc (I know you don't see the coefficient this way -- but it is equivalent to your 17.28 kBtu/sf per 1 pc per 1000 sf).

Most institutions change out their pc's on a 3-4 year cycle. So the pc's used today are two generations newer than those in 2003 buildings. If you had 2011 CBECS data to use to calculate new regression coefficients -- I am guessing (of course I don't have data) that you would get a regression coefficient that is, say 30% lower than the 17.28 regression coefficient now in use -- because current computers use less energy than they did 8 years ago -- particularly with so many laptops replacing desktop computers.

So here is another experiment that might be interesting to perform.

Consider all the buildings that have been entered this last 2-3 years into Portfolio Manager and had their ES calculated. What is this average score? Now, suppose you reduced the computer coefficient by 30% from its value of 17.28 and run new calculations on these same buildings. How does it affect their scores?

Another experiment of interest would be to see how the average number of computers per 1000 ft has changed in 8 years. Your office model has an average number that is 2.23 pc/1000 sf. I wonder what the average is for my 953 NYC office buildings or for my 21 LEED NYC office buildings? What is the average for all buildings entered into Portfolio Manager in the last 2-3 years? I am guessing you will see a trend that computer density has risen significantly.

Thanks for all your help.

Attached is my revised discussion of ENERGY STAR for my NYC paper.

My goal here is not to indict ENERGY STAR but to cast doubt on the way it is being used by the USGBC to conclude their buildings save GHG emission and energy. Any help with language that does a better job of this is appreciated.

John

John

At 04:57 PM 11/27/2012, you wrote:

Hi John,

If you have questions about the nuts and bolts of the office model - I'm the best person for you to talk with. I lead the team that develops the models. The office model is based on the CBECS 2003 data (as our many of our models). And, the interpretation I gave you is accurate. There are lots of pieces of equipment in an office building that are not explicitly added to our model. So, each individual coefficient is representative of more than just the plug load for the specific input (e.g. PC).

As far as the ENERGY STAR buildings - there is a public list of these at: www.energystar.gov/buildinglist

So, I think if you just extract the Excel List for New York, you should be able to identify which buildings in the NYC set are certified. Is this information not included in what they've published.

As far as experimenting with more real buildings - I love the suggestion! Though, of course we have a lot of resource constraints. But, I'll float the idea with some folks around here so we can brainstorm opportunities.

Thanks,

Alexandra Sullivan

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sullivan.alexandra@epa.gov



"John H. Scofield" ---11/27/2012 04:42:07 PM---Alexandra, Now you sound more like an administrator than an engineer/scientist. :)

From: "John H. Scofield" <jscofiel@oberlin.edu>
 To: Alexandra Sullivan/DC/USEPA/US@EPA
 Date: 11/27/2012 04:42 PM
 Subject: Re: a follow up question

Alexandra,

Now you sound more like an administrator than an engineer/scientist. :)

I have not heard the hypothesis that newer buildings are less efficient -- but I have heard (and tend to believe) they use more energy. And I would believe the LEED data tend to support this.

If you can put me in touch with someone who knows the nuts and bolts of your office regression model I would appreciate it. I am confident that my interpretation of the 173 W per computer is correct. What I want to know is what data were used to determine this regression coefficient -- presumably the CBECS 2003 data.

By the way, if there would ever be an opportunity for me to work with folks at EPA to actually analyze buildings to test some of these ideas I would be quite interested. It seems to me that there are plenty of questions about how to interpret ENERGY STAR scores that can only be answered by gathering data and running some experiments.

Along these same lines -- would it be possible to look at source EUI for just "certified" ENERGY STAR buildings? As you know, I have suggested that ES scores are inflated for the NYC office buildings and the LEED buildings -- and one way this might happen is by people entering inflated numbers (hours, pc's, workers) into Portfolio Manager. But if the building was seeking ES certification, then, as you have pointed out, a third party is involved and there are some further checks -- possibly making these data more credible. If I could identify, for instance, the subset of my 953 NYC office buildings that actually have received ES certification, then I could look at their average ES score and average source EUI and compare them with the larger building population.

Would that information be available anywhere?

thanks,
John

thanks,
John

At 03:58 PM 11/27/2012, you wrote:

John, Thank you for the clarification on how you did this calculation. While I understand your approach, I do not think that this interpretation of our model works. Our approach is not designed to estimate or quantify the kW draw of a PC. In the high level correlation between EUI and Hours, Workers, and PCs, the coefficient on each term is not just an estimate of a specific plug load. Rather, each term is a general indicator of business activity and the resulting coefficient could incorporate a variety of factors in the building (copiers, fax machines, office lighting, printers, network equipment, phones, etc). All of these different (specific) things are related to the office's function and the number of PCs and Workers in the building. The correlations we use estimate the relationship between these activities and energy - but they do not quantify the specific kW of any individual load. I understand your hypothesis that buildings are more efficient today - but I've also seen hypotheses that newer buildings are less efficient. I think it is interesting to wonder how the correlations between energy and characteristics like workers, hours, and PCs may (or may not) have changed over the last 10 years. But in the absence of data, we do not know how these correlations have changed - they are going to be influenced by more than just the average kW draw of a computer. Thanks,

Alexandra Sullivan U.S. EPA ENERGY STAR Mail Code 6202J Washington, DC 20460
202.343.9040 sullivan.alexandra@epa.gov

"John H. Scofield" ---11/27/2012 03:20:11 PM---Alexandra, your correlation coefficient for pc's can be written as From: "John H. Scofield" <jscofiel@oberlin.edu> To: Alexandra Sullivan/DC/USEPA/US@EPA Date: 11/27/2012 03:20 PM Subject: Re: a follow up question

Alexandra,
your correlation coefficient for pc's can be written as
1 pc/1000sf = 17.28 kBtu/sf/yr in source EUI
or 1 pc = (17.28) x (1000) x (1000) Btu/yr
If you divide the right hand side by 3.34 to obtain site energy (for electric) then
convert Btu to Joules you get

1 pc = (17.28/3.34) x (1000) x (1000) x 1054 J / yr

Now use 1 kWh = 3,600,000 Joules and you have

1 pc = 1,515 kWh/yr

If you divide this by 24 hrs x 365 days you get a continuous power of 173 W

I think I have this right.

This may have been appropriate for computers in 2003 but I don't see it today.

Has this coefficient been updated since 2003 and, if so, what were the data behind it?

John

At 01:56 PM 11/27/2012, you wrote:

Hi John, Thanks for the note - I hope you had a nice Thanksgiving, too! With respect to our coefficient on PCDensity, I am not sure how you computed the number you present below in terms of kW per computer. Our regression coefficient is expressed in source energy, relative to PCDensity (not PCs). So, I assume you made some kind of assumption with respect to size and operation? Either way, the individual coefficients within our equation are not estimated kWh loads. For example, an "hour" does not require a certain kWh - that coefficient is affected by how you are operating each hour. Therefore, I do not think you can break apart the Hour, Worker, and PC coefficients in our equation and interpret them to be specific building loads. Rather, they are high-level correlations based on activity. Together, all three of these variables say something about the total amount of activity in the building. To operate a building with a certain number of people and computers, you may also have a certain number of copiers, printers, networking devices, fax machines, phones, and other pieces of equipment. Although these are not specific terms in our model, they may be indirectly represented in one or more of our variables. Our top-down correlations look at major characteristics that define activity in a building. The specific adjustment to the EUI may be a result not only of the plug load of one particular piece of equipment, but more generally can embody other related factors that are captured in that indicator of activity. Does that make sense?

Alexandra Sullivan U.S. EPA ENERGY STAR Mail Code 6202J Washington, DC

20460 202.343.9040 sullivan.alexandra@epa.gov

"John H. Scofield" ---11/27/2012 06:33:20 AM---Alexandra, Welcome back from vacation.

From: "John H. Scofield" <jscofiel@oberlin.edu> To: Alexandra Sullivan/DC/USEPA/US@EPA Date: 11/27/2012 06:33 AM Subject: a follow up question

Alexandra, Welcome back from vacation. I have extensively revised my discussion section of my paper regarding ENERGY STAR scores for the NYC and LEED office buildings. I hope to send you this later today for comment. Just so you know, my sense is that ENERGY STAR scores are being used in a way they were never intended and this is leading to unsupported interpretations. More later. But one issue has emerged that bothers me and I want to make sure I understand it right. It appears to me that the regression coefficient that Portfolio Manager has for one personal computer in an office building is equivalent to 173 Watts of continuous electric power. I am pretty sure I have this number correct. Now it seems to me that a computer not only uses electric power, but all that power goes into building heat, and then the building A/C has to remove it with a cooling COP of about 2. So if a computer actually used 115 W of continuous power the building would use about 1.5X this (close to 173 W) to power the computer and to remove the excess heat. But here is my problem. This seems way excessive for today's offices. Many workers now use laptop computers and take them home at night. But even with desktop computers, sleep mode or just turning them off at night and weekends means that this power draw would be for less than half the time. And in the last 5 years almost all CRT's have been replaced with LCD displays with far lower power consumption (and sleep mode). So, it seems to me that any sensible operation of computers in a modern office building.

means a computer would use less than half the annual energy that Portfolio Manager is allowing for a pc. That would seem to me to lead to the situation that any building with a high density of pc's will be allotted more energy than it really needs for these pc's by Portfolio Manager, so that if it does not use this allotted energy, it now gets a higher ENERGY STAR score. Perhaps that is a good thing -- to encourage energy efficient operation. But it seems that this will also yield the result that an otherwise average building that has higher than average pc density that does not use the allotted 173W per pc allowed will have a higher ENERGY STAR score just because of the computers and also use higher than average energy. (If I understand correctly, Portfolio Manager allows up to 11 computers per 1000 sf which, if I work it out, could raise the source EUI by 155 kBtu/sf over the average of 198 kBtu/sf -- nearly doubling the source EUI! OK, here is the question. When was this 173 Watts per computer regression coefficient last updated and is it really appropriate for 2012? My suspicion is that, since 2003, the rapid expansion of use of pc's in buildings combined with the practice of using more laptops and the improvement in computer energy efficiency -- together have caused dramatic inflation in ENERGY STAR scores for some classes of buildings.

Thanks, John ===== John H. Scofield
Department of Physics & Astronomy 110 N. Professor St. Oberlin
College Oberlin, OH 44074 email: John.Scofield@oberlin.edu
voice: 440.775.8333 fax: 440.775.6379 url:
<http://www.oberlin.edu/physics/Scofield>

Re: pc contribution to the predicted EUI for offices 

Alexandra Sullivan to: John H. Scofield

12/19/2012 05:30 PM

	John H. Scofield	pc contribution to the predicted EUI for offices
	Alexandra Sullivan	<i>Hi John, Yup - you've shared this. I understand the calculation, but I t</i>

Hi John,

Yup - you've shared this. I understand the calculation, but I think I just have a different interpretation :) Presumably, if you actually add PCs, you are also changing other aspects of your operation, such as printers, copiers, configurations of cubicles, etc. So, the incremental difference you see is not the kWh of a PC, but rather reflective of the overall correlation between PCs and energy. Buildings with more PCs use more energy - but this may not be limited to the plug load only, but to other operational differences.

I'm headed off for the day. I think we'll probably continue to interpret this result differently - but that is allowed! And of course, this dialogue is independent of whether/how the correlation may be changing over time.

Have a nice holiday season :)

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



"John H. Scofield" Alexandra, I don't recall if I shared the details be...

12/19/2012 05:19:47 PM

From: "John H. Scofield" <jscofiel@oberlin.edu>
To: Alexandra Sullivan/DC/USEPA/US@EPA
Date: 12/19/2012 05:19 PM
Subject: pc contribution to the predicted EUI for offices

Alexandra,

I don't recall if I shared the details before for my 173 Watt number per pc, but here it is. The attached word document shows how EPA's regression coefficient for pc's is exactly equivalent to adding 1,500

kWh of electric use per pc per year to the building.

cheers,
John

=====
John H. Scofield
Department of Physics & Astronomy
110 N. Professor
St.
Oberlin College
Oberlin, OH 44074
email: John.Scofield@oberlin.edu
voice: 440.775.8333
fax: 440.775.6379
url: <http://www.oberlin.edu/physics/Scofield> [attachment "pc energy.doc"
deleted by Alexandra Sullivan/DC/USEPA/US]

{In Archive} Retail and Office Technical Documents

Alyssa Quarforth to: Alexandra Sullivan

12/13/2007 05:33 PM

Archive: This message is being viewed in an archive.



Here are the two documents after all the consistency checks we discussed.



Retail Draft Dec13.doc



Office TD Dec-13.doc

Alyssa Quarforth
Program Analyst, Market Sectors Group
ENERGY STAR, Commercial and Industrial Branch
Climate Protection Partnerships Division, US EPA

Mail Code: 6202J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov

{In Archive} Fw: Office Model Requirements

Denessa Moses

to:

Alexandra Sullivan, Alyssa Quarforth

07/31/2007 06:21 PM

Hide Details

From: Denessa Moses/DC/USEPA/US

To: Alexandra Sullivan/DC/USEPA/US@EPA, Alyssa Quarforth/DC/USEPA/US@EPA,

History: This message has been replied to.

Archive: This message is being viewed in an archive.

1 Attachment



Space Model_Office_Reqs.doc

Alexandra, Aly:

This requirements doc will be used as a foundation for the development of the Office model. It was developed using much of the guidance that you provided to SRA, so it should look familiar -- but please let me know if you see a discrepancy.

Thanks,

- Denessa

-----Forwarded by Denessa Moses/DC/USEPA/US on 07/31/2007 06:18PM -----

To: Denessa Moses/DC/USEPA/US@EPA
From: "Mikulka, Kristine" <Kristine_Mikulka@sra.com>
Date: 07/31/2007 05:31PM
Subject: Office Model Requirements

Hi Denessa ?

I have attached the Office model requirements document for review. Please let me know if you have any questions.

Thanks, Kristine

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913

{In Archive} Re: Fw: Office Model Requirements 

Alexandra Sullivan to: Denessa Moses

08/02/2007 02:02 PM

Cc: Alyssa Quarforth

Archive: This message is being viewed in an archive.

	Denessa Moses	Fw: Office Model Requirements
	Alexandra Sullivan	<i>Denessa, Here is an attached commented version, as SRA requested</i>

Denessa,

Here is an attached commented version, as SRA requested. In addition, I wanted to ask whether SRA will also be preparing a new version of a report that summarizes the number of buildings who will no longer get a rating with the new "eligibility rules". The previous report about this was based on the 20,000 buildings from an earlier score change report.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
Mail Code 6202J
Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



Space Model_Office_Reqs_EPAComent.doc

Denessa Moses/DC/USEPA/US



**Denessa
Moses/DC/USEPA/US**
07/31/2007 06:21 PM

To Alexandra Sullivan/DC/USEPA/US@EPA, Alyssa
Quarforth/DC/USEPA/US@EPA
cc

Subject Fw: Office Model Requirements

Alexandra, Aly:

This requirements doc will be used as a foundation for the development of the Office model. It was developed using much of the guidance that you provided to SRA, so it should look familiar -- but please let me know if you see a discrepancy.

Thanks,
- Denessa

-----Forwarded by Denessa Moses/DC/USEPA/US on 07/31/2007 06:18PM -----

To: Denessa Moses/DC/USEPA/US@EPA
From: "Mikulka, Kristine" <Kristine_Mikulka@sra.com>
Date: 07/31/2007 05:31PM
Subject: Office Model Requirements

Hi Denessa ?

I have attached the Office model requirements document for review. Please let me know if you have any questions.

Thanks, Kristine

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913



Space Model_Office_Reqs.doc

{In Archive} Final Draft email for office PM users

Alyssa Quarforth to: Denessa Moses

08/28/2007 08:21 AM

Cc: Alexandra Sullivan

Archive: This message is being viewed in an archive.

	Alyssa Quarforth	Final Draft email for office PM users
	Denessa Moses	<i>Aly, Is this version final or draft? Meaning, everyone who has to "ap</i>
	Alyssa Quarforth	<i>Denessa, As far as I know it is the final version. Mike approved</i>
	Alexandra Sullivan	<i>Denessa/Aly, I do not think it requires more review. How</i>
	Alyssa Quarforth	<i>Technically it does not need to be sent until next w</i>

Denessa,

Please find attached the final draft email to be sent to PM office model users.

Thanks,



Aly

Aug2007_OfficeModelChanges_Final.doc

Alyssa Quarforth
Program Analyst, Market Sectors Group
ENERGY STAR, Commercial and Industrial Branch
Climate Protection Partnerships Division, US EPA

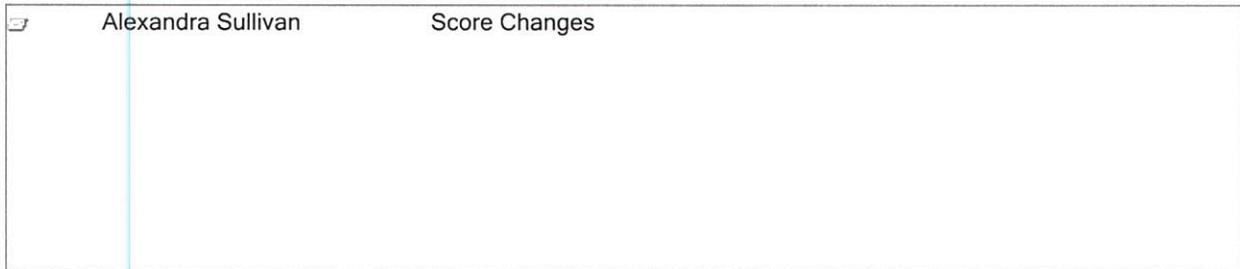
Mail Code: 6202J
Washington DC 20460
202.343.9604
Quarforth.Alyssa@epa.gov

{In Archive} Score Changes

Alexandra Sullivan to: Alyssa Quarforth

09/10/2007 10:03 AM

Archive: This message is being viewed in an archive.



Aly,

Here is my draft. Per our talk, I agree with you that we should put the Appendix table on Filters back in, and also retain a section that describes the changes by space and operating characteristics. For now, I think we can make this a "place holder" and when we finalize the other memo, we can just cut and paste it in.

Thanks,

Alexandra Sullivan

U.S. EPA
ENERGY STAR
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Washington, DC 20460
202.343.9040
sullivan.alexandra@epa.gov



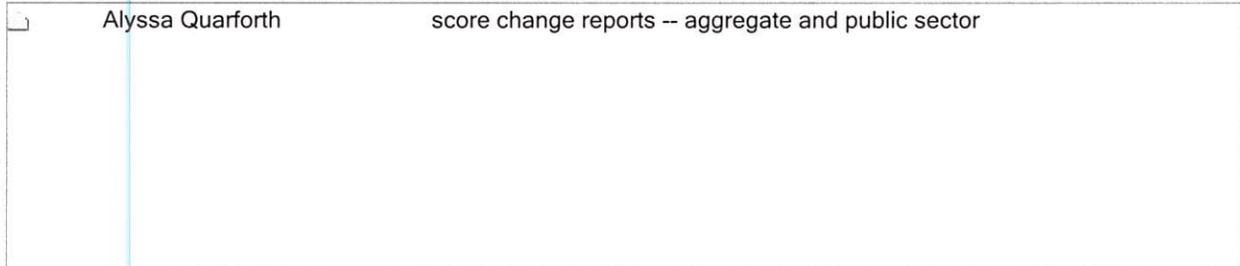
Aggregate_Changes.doc

{In Archive} score change reports -- aggregate and public sector

Alyssa Quarforth to: Alexandra Sullivan

09/18/2007 04:13 PM

Archive: This message is being viewed in an archive.



Alexandra,

Attached is the aggregate score change report (with updated numbers) and the public sector score change report. Let me know if you have any questions.

Thanks,



Aly

2007_September Aggregate_Changes.doc Public Sector.doc

Alyssa Quarforth
Program Analyst, Market Sectors Group
ENERGY STAR, Commercial and Industrial Branch
Climate Protection Partnerships Division, US EPA

Mail Code: 6202J
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Quarforth.Alyssa@epa.gov



{In Archive} Review of Overall Score Change and Expected Changes documents

Lisauskas, Sara

to:

Alexandra Sullivan, Alyssa Quarforth

09/21/2007 10:37 AM

Hide Details

From: "Lisauskas, Sara" <SLisauskas@icfi.com>

To: Alexandra Sullivan/DC/USEPA/US@EPA, Alyssa Quarforth/DC/USEPA/US@EPA,

Archive: This message is being viewed in an archive.

2 Attachments



2007_September Aggregate_Changes-SL.doc ExpectedChanges-SL.doc

Alexandra and Aly,

Attached are my edits to the Overall Score Change and Expected Changes documents. I didn't have too many edits to the overall score changes results. I did add some suggested edits to the Expected Changes document. Feel free to accept or reject any changes. I tried to read it from the perspective of an account manager, to give them enough information to help them understand changes, and to be able to explain changes to partners.

Sara

Sara Lisauskas
ICF International
978-658-1650
slisauskas@icfi.com



{In Archive} Fw: Office, Retail, and Wastewater are in Staging

Denessa Moses to: Alexandra Sullivan, Alyssa Quarforth

09/24/2007 08:36 AM

Cc: Michael Zatz

History: This message has been forwarded.

Archive: This message is being viewed in an archive.

Date	Subject
"	

Model updates for Oct. 1 release are now on the PM staging server. Please take a look at your convenience...

Thanks,
Denessa

----- Forwarded by Denessa Moses/DC/USEPA/US on 09/24/2007 08:34 AM -----



"Mikulka, Kristine"
<Kristine_Mikulka@sra.com>
09/24/2007 08:24 AM

To Denessa Moses/DC/USEPA/US@EPA

cc

Subject Office, Retail, and Wastewater are in Staging

Good Morning Denessa –

We successfully pushed the changes to Office, Retail, and Wastewater to Staging this weekend. The total time to update all the records in Staging was a little over 24 hours. Since Production has about 30,000 more buildings but is faster the time for the release to Production this weekend should be comparable. Please review and let us know if you have any questions. I have put the link to staging below for your convenience.

<https://esstaging.sradev.com/istar/pmpam/>

Thanks, Kris

Kristine Mikulka

Project Manager

kristine_mikulka@sra.com

703-284-6913

{In Archive} Sector Data - Commercial Offices & Banks

Alexandra Sullivan to: Stuart Brodsky

09/24/2007 04:19 PM

Cc: Michael Zatz, Alyssa Quarforth, Anna Stark

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Sector Data - Commercial Offices & Banks
	Stuart Brodsky	<i>Great job today. thank you for your attention to the details. I spoke to s</i>

Stuart,

Attached you will find the electronic versions of the following reports:

- Aggregate Changes Document
- Commercial Offices and Banks Document
- Excel spreadsheet with Commercial Office/Bank specific data by partner/building

FYI - Hospitality is on the way pending my review of information hot of the presses from SRA.

Let me know if you have additional questions,

Alexandra Sullivan

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202.343.9040
sullivan.alexandra@epa.gov



2007_September Aggregate_Changes.doc Commercial Sector.doc Commercial Sector.xls

{In Archive} Re: Sector Data - Commercial Offices & Banks 

Stuart Brodsky to: Alexandra Sullivan

09/24/2007 06:11 PM

Cc: Alyssa Quarforth, Anna Stark, Michael Zatz

Archive: This message is being viewed in an archive.

	Alexandra Sullivan	Sector Data - Commercial Offices & Banks
	Stuart Brodsky	<i>Great job today. thank you for your attention to the details. I spoke to s</i>

Great job today. thank you for your attention to the details. I spoke to several consultants. They are thrilled that EPA has spent so much time and diligence on these issues.

Stuart Brodsky
National Program Manager, Commercial Properties
ENERGY STAR

United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW, Code 6202J
Washington, DC 20460

202 343 9242
brodsky.stuart@epa.gov
energystar.gov

Alexandra Sullivan/DC/USEPA/US

**Alexandra
Sullivan/DC/USEPA/US**
09/24/2007 04:19 PM

To: Stuart Brodsky/DC/USEPA/US@EPA
cc: Michael Zatz/DC/USEPA/US@EPA, Alyssa
Quarforth/DC/USEPA/US@EPA, Anna
Stark/DC/USEPA/US@EPA
Subject: Sector Data - Commercial Offices & Banks

Stuart,

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- Commercial Offices and Banks Document
- Excel spreadsheet with Commercial Office/Bank specific data by partner/building

FYI - Hospitality is on the way pending my review of information hot of the presses from SRA.

Let me know if you have additional questions,

Alexandra Sullivan

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sullivan.alexandra@epa.gov



2007_September Aggregate_Changes.doc



Commercial Sector.doc



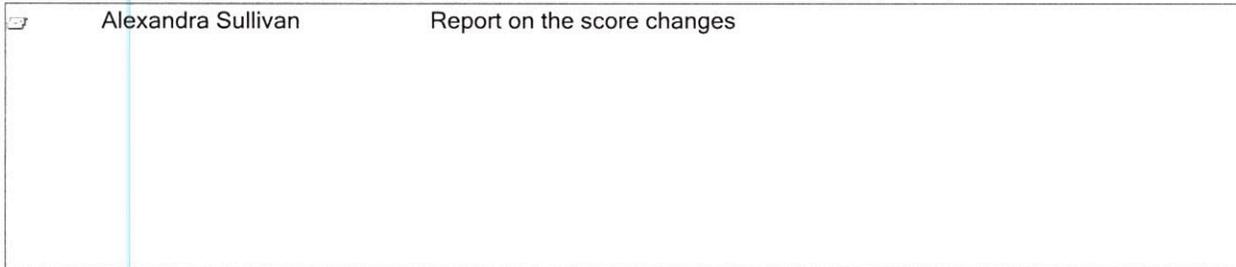
Commercial Sector.xls

{In Archive} Report on the score changes

Alexandra Sullivan to: Denessa Moses

09/25/2007 05:50 PM

Archive: This message is being viewed in an archive.



Denessa,
I totally forgot that you asked for this report earlier.

Thanks,
Alexandra Sullivan

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sullivan.alexandra@epa.gov



2007_September Aggregate_Changes.doc

{In Archive} PM Staging Questions

Alexandra Sullivan to: Denessa Moses
Cc: Alyssa Quarforth

09/26/2007 11:13 AM

Archive: This message is being viewed in an archive.

Date	From	Subject
	Alexandra Sullivan	09/26/2007 11:15 AM IGNORE LAST EMAIL Re: PM

Denessa,

To assist with my testing, can SRA provide the as-experienced HDD and CDD value for zip code 02914 for the period ending August 2007.

I was using the 30-year averages for my first two buildings and all seemed fine. For some reason though, my third building is several points off. I'd like re-check my entries and calculations with the right HDD and CDD.

Thank you,

Alexandra Sullivan

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202.343.9040
sullivan.alexandra@epa.gov